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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,854	10/13/2000	Ville Eerola	PM 274425	6648
	7590	02/23/2005	2000010US/KA/ko	
KIMBERLEY G. NOBLES IRELL & MANELLA LLP 840 NEWPORT CENTER DRIVE SUITE 400 NEWPORT BEACH, CA 92660			EXAMINER	
			FAN, CHIEH M	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/689,854

Applicant(s)

EEROLA ET AL.DFCX

Examiner

Chieh M Fan

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 18 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Request for Continued Examination (RCE) and the amendment filed on 12/13/04.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Tran et al. (U.S. Patent No. 5,715,276).

Regarding claims 1, 2, 4, and 5, Tran et al. teaches a matched filter for implementing the correlation of input signals and reference signals, the matched filter comprising:

first means (134 in Fig. 6 or see 255, 256 in Fig. 16) for storing M samples taken from N received signals, wherein $N \geq 2$, and in which said M samples of the N input signals are stored one sample at a time at said N input signals' frequencies;

second means (131, 132 in Fig. 6 or Fig. 16) for storing K M-sample long reference signals, wherein $K \geq 2$;

multiplexing means (133 in Fig. 6 or 133 and 233 in Fig. 16) for applying one of said N input signals and one of said M-sample long reference signals at a time from said first and second storage means to calculation means by applying alternately at least one combination of the N input signals and the M-sample long reference signals; and

calculation means (135, 136, 137, 139, and 147 in Fig. 6 or 235, 136, 137, 139, 147 in Fig. 16) for calculating the correlation time-dividedly for a combination of said N input signals and said M-sample long reference signals so that correlation results calculated from different signals appear at the output of the calculation means as a sequence, wherein the calculation comprises a comparator (135 in Fig. 6 or 235 in Fig. 16) and an adder means (136 in Fig. 6 or 16).

Regarding claims 3 and 6, the comparator comprises an XOR (see 135 in Fig. 6 or 235 in Fig. 16).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran et al. (U.S. Patent No. 5,715,276) in view of the admitted prior art.

Regarding claims 7, 8, 12 and 13, Tran et al. teaches the claimed invention including a first storage means, a second storage means, a multiplexing means and a calculation means (see the rationale applied to claims 1 and 4 above), but does not specifically teach a controller for comparing the correlation results generated by the matched filter with a predetermined threshold value to determine if the signal corresponding to the reference signal is found; i.e., the spreading code of the input signal is in phase with the reference signal.

However, the comparison of the correlation signal with a predetermined threshold to determine if the spreading code of the input signal is in phase with the reference signal is well known and widely used in the art. Such synchronization, i.e., in-phase, situation is explicitly required to properly demodulate (despread) the received signals. The admitted prior art as described in the background section of the present application clearly teaches a controller (3-20 in Fig. 3 of the present application) for comparing the correlation results generated by the matched filter with a predetermined threshold value to determine if the spreading code of the input signal is in phase with the reference signal. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to couple the correlation results of Tran to a threshold comparator to determine if the spreading code of the input signal is in phase with the reference signal, and thereby to ensure proper demodulation of the received signal.

Regarding claim 9, the comparator comprises an XOR (see 135 in Fig. 6 or 235 in Fig. 16).

Regarding claims 10 and 11, the admitted prior art further teaches a squaring means (3-14 and 3-16 in Fig. 3) for squaring the correlation results from the matched filters and a summing means (3-18) for summing the squared correlation results.

Response to Arguments

5. Applicant's arguments filed 12/13/04 have been fully considered but they are not persuasive.

The applicant argues that the Tran reference teaches a single reference signal which is stored in two portions.

Examiner's response --- The applicant is reminded that the examiner is entitled to give the broadest reasonable interpretation to the language of the claims. The examiner is not limited to the applicant's definition which is not specifically set forth in the claims. See *In re Tanaka et al.*, 193 USPQ 139, (CCPA) 1977. The applicant is also reminded that a portion of a signal is still considered a signal. For example, if we divide a reference-chip-sequence signal {0 1 1 0 1 0 0 1} into two portions {0 1 1 0} and {1 0 0 1}. Each of {0 1 1 0} and {1 0 0 1} is still a signal. Therefore, Tran teaches the claimed limitation "storing K M-sample long reference signals, wherein $K \geq 2$ ".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chieh M Fan whose telephone number is (571) 272-3042. The examiner can normally be reached on Monday-Friday 8:00AM-5:30PM, Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chieh M Fan
Primary Examiner
Art Unit 2634

February 16, 2005